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## ABSTRACT

A stretchable interconnect for electrically connecting electronic devices comprises a photolithographically patterned conductor extending between two of said devices for electrically coupling a contact of one device to a contact of another device. The stretchable interconnect preferably comprises a coiled conductor. The coiled conductor is formed of a metal or alloy having a stress gradient extending through a thickness of said conductor. A sensor array employs the stretchable interconnects to connect contacts of one electronic device to another electronic device. The sensor array can be employed in a flexible or stretchable sensing skin of a robot as well as other applications. The stretchable interconnects can be formed by a photolithographic process on the same substrate which supports the electronic devices. The interconnects become stretchable when the supporting substrate is removed from the interconnect. Preferably coils which are formed are di-helic.

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